



2-year warranty

Type overview

Type	DN
B61000VB-1550	250

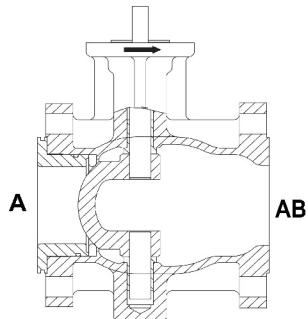
Technical data

	Functional data	
	Valve size [mm]	10" [250]
	Fluid	chilled or hot water, up to 60% glycol, steam
	Fluid Temp Range (water)	-22...380°F [-30...193°C]
	Fluid Temp Range (steam)	-22...365°F [-30...185°C]
	Body Pressure Rating	ANSI Class 150
	Close-off pressure Δps	250 psi
	Flow characteristic	equal percentage
	Servicing	repack/rebuild kits available
	Rangeability Sv	300:1
	Maximum differential pressure (water)	150 psi
	Max Differential Pressure (Steam)	100 psi
	Close-Off Pressure (Steam)	150 psi
	Flow Pattern	2-way
	Leakage rate	ANSI Class IV
	Controllable flow range	75°
	Cv	1550
	Maximum Inlet Pressure (Steam)	150 psi
	Materials	
	Valve body	WCC grade carbon steel
	Body finish	matt black body finish
	Stem	stainless steel
	Stem seal	PTFE V-ring
	Seat	PTFE
	Pipe connection	125/150 lb flanged, ASME/ANSI b16.1/b16.5
	Ball	stainless steel
	Suitable actuators	
	Non-Spring	SY4

Product features

Application	This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box reheat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow.

Flow/Mounting details



Dimensions

Type	DN	Weight
B61000VB-1550	250	215 lb [97.5 kg]

MFT/programmable, Non fail-safe, 120 V



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Technical data

	Electrical data	
Nominal voltage	AC 120 V	
Nominal voltage frequency	50/60 Hz	
Nominal voltage range	AC 96...132 V	
Transformer sizing	253 VA	
Current consumption	2.1 A	
Auxiliary switch	2x SPDT, 1 mA...5 A (3 A inductive), DC 5 V...AC 250 V, 1 x 3° / 1 x 87°	
Switching capacity auxiliary switch	1 mA...5 A (3 A inductive), DC 5 V...AC 250 V	
Electrical Connection	Terminal blocks	
Overload Protection	thermally protected 135°C cut-out	
Internal Humidity Control	resistive heating element	
	Functional data	
Torque motor	400 Nm	
Operating range Y	2...10 V	
Input impedance	100 kΩ	
Position feedback U	2...10 V	
Position feedback U note	Max. 0.5 mA	
Position feedback U variable	VDC variable	
Direction of motion motor	selectable with switch 0/1	
Manual override	hand wheel	
Angle of rotation	90°	
Running Time (Motor)	24 s	
Duty cycle value	75%	
Noise level, motor	45 dB(A)	
Position indication	top mounted domed indicator	
	Safety data	
Degree of protection IEC/EN	IP66/67	
Degree of protection NEMA/UL	NEMA 4X	
Enclosure	UL Enclosure Type 4X	
Agency Listing	ISO, CE, cCSAus	
Quality Standard	ISO 9001	
Ambient humidity	Max. 100% RH	
Ambient temperature	-22...149°F [-30...65°C]	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
	Weight	
Weight	44 lb [20 kg]	

Technical data

Materials	Housing material	die cast aluminium
	Gear train	high alloy steel gear sets, self locking

Product features

Application	SY Series actuators are fractional horsepower devices, and utilize full-wave power supplies. Observe wire sizing and transformer sizing requirements. Proportional models CANNOT be connected to Belimo direct coupled (AF, AM, GM...etc) actuator power supplies or any type of half-wave device. You MUST use a separate, dedicated transformer or power supply to power the SY actuator. Please do not connect other automation equipment to the dedicated SY supply source. You MUST use four wires (plus a ground) to control a proportional control SY actuator (See SY Wiring Section).
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Accessories

	Gateways	Description	Type
	Gateway MP to BACnet MS/TP		UK24BAC
	Gateway MP to Modbus RTU		UK24MOD
	Gateway MP to LonWorks		UK24LON
	Electrical accessories	Description	Type
	Local electric disconnect for SY4...12 series actuator, AC 120 V, MFT		HOA-120VMFT
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US
	Battery backup system for SY4...6 series actuator, AC 120 V, on/off		EXT-NSV-B03-120
	Battery backup system for SY4...6 series actuator, AC 120 V, MFT		EXT-NSV-B04-120
	Battery backup system for SY4...5 series actuator, AC 24 V, on/off		EXT-NSV-B13-24
	Battery backup system for SY4...5 series actuator, AC 24 V, MFT		EXT-NSV-B14-24
	Tools	Description	Type
	Connecting cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection		ZK4-GEN
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US

Electrical installation

 **INSTALLATION NOTES**

-  Do not change sensitivity or dip switch setting with power applied.
-  Power supply Common/Neutral and Control Signal "-"wiring to a common is prohibited. Terminals 4 and 6 need to be wired separately.
-  Isolation relays must be used in parallel connection of multiple actuators using a common control signal inputs. The relays should be DPDT.
-  Isolation relays are required in parallel applications. The reason parallel applications need isolation relays is that the motor uses two sets of windings, one for each direction. When one is energized to turn the actuator in a specific direction a voltage is generated in the other due to the magnetic field created from the first. It's called back EMF. This is not an issue with one actuator because the voltage generated in the second winding isn't connected to anything so there is no flow. On parallel applications without isolation, this EMF voltage energizes the winding it is connected to on the other actuators in the system, the actuators are trying to turn in both directions at once. The EMF voltage is always less than the supply voltage due to the resistance of the windings, so while the actuator still turns in the commanded direction, the drag from the other reduces the torque output and causes overheating.

 **Warning! Live electrical components!**

Electrical installation

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Wiring diagrams

